

National Health and Nutrition  
Examination Survey 2003-2004



---

## Documentation, Codebook, and Frequencies

**MEC Exam Component: Vision  
Examination Data**

**Survey Years:  
2003 to 2004**

**SAS Export File:  
VIX\_C.XPT**

December 2005

# NHANES 2003–2004 Data Documentation

## Exam Component: Vision (VIX\_C)

Years of Coverage: 2003–2004

First Published: December 2005

Last Revised: N/A

---

### Component Description

The NHANES Vision Examination data will be used to: 1) measure the prevalence of visual acuity impairment (visual acuity worse than 20/40) in the U.S. population; 2) measure the distribution of refractive error in the U.S. population; and 3) evaluate functional impairment related to vision.

The NHANES 2003–2004 Vision Examination consisted of three parts:

**Eye Glasses Prescription Determination** – For persons 12 years of age and older, eye glass prescriptions are measured when eye glasses for viewing distant objects are available.

**Distance Visual Acuity and Objective Refraction/Keratometric Evaluation** – For all persons 12 years and older, distance vision is assessed regardless of whether they wear eyeglasses or contacts; the refraction test measures the person's refractive error and corneal curvature.

**Vision Near Card Test** – For persons 50 years and over, visual acuity at near was assessed.

### Eligible Sample

All sample persons aged 12 years and older are eligible to participate in (1) automated determination of prescription for eye glasses used to view distant objects, (2) distance visual acuity assessment and (3) automated objective refraction/keratometric evaluation. Sample persons aged 50 years and older are also eligible for the Near Card visual acuity test.

Participants were excluded from the Vision Exam if they were determined to be completely blind or unable to see in both eyes based on the following question asked in the Sample Person Household Interview: "With both eyes open, can you see light?" Participants were also excluded from the exam if they had a severe eye infection (i.e., purulent discharge with redness and inflammation) in one or both eyes. A participant wearing an eye patch would not be excluded; however, the exam would not be conducted on the affected eye.

### Protocol and Procedure

The vision exam included measurements of: 1) eyeglass prescription for glasses used to view distant objects; 2) presenting visual acuity with current correction; 3) visual acuity incorporating objective refraction; and 4) near-vision acuity.

Health technicians completed screening questions that involved observation of the subject to determine if the medical exclusion criteria applied. The sample person was then asked additional screening questions (e.g. do they wear any distance correction) to determine which measurements in the examination protocol were relevant.

If the sample person wore eyeglasses to see distant objects, their current eyeglass prescription was determined by using the Nidek Auto Lensmeter Model LM-990A. The Nidek Auto Refractor Model ARK-760 instrument was used to assess visual acuity. Presenting visual acuity was tested with whatever distance correction the participant usually wears, if any. If the participant's visual acuity with their usual correction was 20/30 or worse, visual acuity was further assessed using the objective refraction measurements as the "correction factor" for the participant.

For sample persons aged 50 years and older, near vision was tested with a near vision card, and usual reading distance was recorded prior to measuring their presenting distance visual acuity.

The Nidek Auto Lensmeter Model LM-990A and the Nidek Auto Refractor Model ARK-760 instruments have been used since 1999.

The Vision Examination Protocol is discussed in detail in the NHANES Vision Procedures Manual.

## **Quality Assurance & Quality Control**

A variety of quality control procedures were used to ensure the accurate and reliable collection of these data. Calibrations of the lensmeter and the autorefractor were performed prior to conducting examinations at each survey location, and weekly thereafter. At regular intervals, NCHS and contractor staff observed vision examinations conducted in the MEC to evaluate whether appropriate procedures and techniques were being followed. Retraining sessions were conducted with all MEC health technicians to review data collection procedures.

The MEC health technicians conducted the vision examination. These technicians received 8 weeks of training initially, and subsequently underwent updates and remedial training as needed. Technicians referred to the Vision Procedures Manual for specific instructions for the administration of this component.

For details on the QA/QC process for this component, please refer to the NHANES Vision Procedures Manual.

## **Data Processing and Editing**

Automated data collection procedures for the survey were used to collect the vision data. Eyeglass prescription data were captured electronically by the lensmeter, and the objective refraction and visual acuity data were captured by the autorefractor. Both sets of data were then transferred to the survey database system. Visual acuity data values were also captured manually by the technician and entered directly into the database.

During the editing process, all data were examined for logical inconsistencies and technician or equipment errors. Back-end edits of the data were performed when errors were detected.

### **Variable-Specific Editing:**

#### **VIDLVA and VIDRVA – Presenting visual acuity variables**

These variables provide the participant's presenting visual acuity, tested with the autorefractor, while wearing whatever distance correction the participant usually wears, if any. The values were automatically captured from the autorefractor and also manually recorded by the technician. In cases of disagreement between the automatic and technician-recorded values, the values recorded by the technician were used (unless they were missing, in which case the machine-captured data were used).

#### **VIDLOVA and VIDROVA – Visual acuity with objective refraction variables (measured only for eyes with presenting visual acuity of 20/30 or worse).**

These variables provide the participant's visual acuity, measured after incorporating information from the objective refraction measurements. The values were automatically captured from the autorefractor and also manually recorded by the technician. In cases of disagreement between the automatic and technician-recorded values, the values recorded by the technician were used (unless they were missing, in which case the machine-captured data were used).

#### **Objective Refraction Variables - VIXORSM, VIXORCM, VIXORAM, VIXOLSM, VIXOLCM, VIXOLAM**

These variables were automatically computed by the autorefractor and represent the median value of three objective refraction values.

#### **VIDORFM and VIDOLFM – Objective refraction confidence level reading variables**

These variables were computed by averaging three objective refraction confidence level readings.

**Mean Keratometric Measurement Variables** – VIXKRMM, VIXKRD<sub>M</sub>, VIXKLMM, VIXKLD<sub>M</sub>

These variables were automatically computed by the autorefractor and represent the average of two keratometric measurements:

VIXKRMM from VIXKRM1 and VIXKRM2;  
VIXKRD<sub>M</sub> from VIXKRD1 and VIXKRD2;  
VIXKLMM from VIXKLM1 and VIXKLM2;  
VIXKLD<sub>M</sub> from VIXKLD1 and VIXKLD2.

**Analytic Notes**

Users are encouraged to note carefully the English instructions describing the various variables in the codebook documentation.

This dataset only contains data for the vision examination conducted in the MEC. There is another dataset containing household interview responses to the vision section (VIQ) of the Sample Person Questionnaire. Data from the two datasets can be combined and analyzed using the guidelines provided by NCHS. Note that not all of the same persons appear in the household interview and MEC examination datasets.

Please refer to the Analytic Guidelines on the NHANES website to obtain further details on the use of sample weights and other analytic issues at:

[http://www.cdc.gov/nchs/about/major/nhanes/nhanes2003-2004/analytical\\_guidelines.htm](http://www.cdc.gov/nchs/about/major/nhanes/nhanes2003-2004/analytical_guidelines.htm)

**References**

None

## **Locator Record**

**Title:** Vision (VIX\_C)

**Contact Number:** 1-866-441-NCHS

**Years of Content:** 2003–2004

**First Published:** December 2005

**Revised:** N/A

**Access Constraints:** None

**Use Constraints:** None

**Geographic Coverage:** National

**Subject:** Vision

**Record Source:** NHANES 2003–2004

**Survey Methodology:** NHANES 2003–2004 is a stratified multistage probability sample of the civilian non-institutionalized population of the U.S.

**Medium:** NHANES Web site; SAS transport files

**National Health and Nutrition Examination Survey  
Codebook for Data Production (2003-2004)**

**MEC Examination  
Vision Examination (VIX\_C)  
Person Level Data**

December 2005



<b>SEQN</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Respondent sequence number
<b>English Text:</b> Respondent sequence number	
<b>English Instructions:</b>	

<b>VIQ110</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	SP has a severe eye infection?

**English Text:** Does SP appear to have a severe eye infection in one or both eyes?

**English Instructions:** The examiner observes the examinee's eyes for possible infection. If either eye has a sign of infection, the examinee is excluded from the vision component.

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Yes	3	
2	No	6527	VIQ130
.	Missing	460	

<b>VIQ121</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Which eye(s) infected?

**English Text:** if VIQ110 = "Yes" record which eye(s) is/are affected.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Right	1	End of Section
2	Left	0	End of Section
3	Both	2	End of Section
.	Missing	6987	

<b>VIQ130</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Is SP wearing an eye patch?

**English Text:** Is SP wearing an eye patch?

**English Instructions:** Although the SP is not excluded from the vision examination because he/she wears an eye patch, the examiner will not conduct the examination on the affected eye.

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Yes	1	
2	No	6526	VIQ150
.	Missing	463	

<b>VIQ141</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Which eye has eye patch?

**English Text:** If VIQ130 = "Yes" record which eye(s) is/are affected.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Right	0	
2	Left	1	
3	Both	0	
.	Missing	6989	

<b>VIQ150</b>	<b>Target</b>		
	B(50 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Glasses/contact lenses for near work?		
<b>English Text:</b> Do you wear glasses or contact lenses for reading or near work?			
<b>English Instructions:</b>			
Code or Value	Description	Count	Skip to Item
1	Yes	1870	
2	No	268	VIXNC1
9	Don't know	2	
.	Missing	4850	

<b>VIQ160</b>	<b>Target</b>
	B(50 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Glasses/contact lenses available?

**English Text:** If VIQ150 = "Yes", record if the examinee brought their near work glasses, contacts, or a combination of glasses and/or contacts to the testing facility.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Yes	1617	
2	No	253	VIXNC1
.	Missing	5120	

<b>VIQ170</b>	<b>Target</b>
	B(50 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Glasses or contacts worn for near test?

**English Text:** If VIQ160 = "Yes", record whether the examinee wore glasses, contacts, or a combination of glasses and/or contacts for test of near vision.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Glasses	1587	
2	Contacts	24	
3	Both glasses and contact lenses	6	
.	Missing	5373	

<b>VIXNC1</b>	<b>Target</b>		
	B(50 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Line read on near card		
<b>English Text:</b> The number of the last line the examinee read with one or fewer misses, that is the number of the last line where the examinee read at least four out of the five characters correctly. Line 1 has the largest print: line 5 has the smallest print.			
<b>English Instructions:</b>			
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0	0	4	
1	1	16	
2	2	179	
3	3	296	
4	4	684	
5	5	954	
8	Could not obtain	7	
.	Missing	4850	

<b>VIXNC2</b>	<b>Target</b>		
	B(50 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Testing distance of near card		
<b>English Text:</b> Record to the nearest inch the distance from the center of the card to the examinee's brow. <b>English Instructions:</b> A measuring tape is used to determine the distance. (Rounding rule: Numbers less than 0.5, round down (example 16 1/4 = 16) and numbers equal to or greater than 0.5, round up (13 1/2 = 14, 21 3/4 = 22).)			
Code or Value	Description	Count	Skip to Item
5	5	1	
6	6	4	
7	7	6	
8	8	5	
9	9	19	
10	10	34	
11	11	75	
12	12	129	
13	13	165	
14	14	207	
15	15	256	
16	16	212	
17	17	194	
18	18	141	
19	19	139	
20	20	138	
21	21	88	
22	22	68	
23	23	77	
24	24	55	
25	25	42	
26	26	35	

27	27	21	
28	28	10	
29	29	6	
30	30	4	
31	31	2	
88	Could not obtain	7	
.	Missing	4850	

<b>VIQ180</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Eye surgery for near sightedness?		
<b>English Text:</b> Have you ever had eye surgery to treat or prevent nearsightedness or myopia?			
<b>English Instructions:</b> The interest is in laser or radial keratotomy (RK) surgeries used to improve nearsightedness. Some other terms to describe this surgery include: PRK, RK, Lasik, Eximer, or Refractive Surgery.			
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Yes	58	
2	No	6463	VIQ200
9	Don't know	5	VIQ200
.	Missing	464	

<b>VIQ191</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Which eye(s) surgery - near-sightedness?		
<b>English Text:</b> If VIQ180 = "Yes", record which eye(s) was/were operated on.			
<b>English Instructions:</b>			
Code or Value	Description	Count	Skip to Item
1	Right	5	
2	Left	3	
3	Both	50	
.	Missing	6932	

<b>VIQ200</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Eye surgery for cataracts?		
<b>English Text:</b> Have you ever had eye surgery to treat cataracts?			
<b>English Instructions:</b>			
Code or Value	Description	Count	Skip to Item
1	Yes	425	
2	No	6092	VIQ220
9	Don't know	9	VIQ220
.	Missing	464	

<b>VIQ211</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Which eye(s) cataract surgery?

**English Text:** if VIQ200 = "Yes", record which eye(s) was/were operated on for cataracts.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Right	74	
2	Left	50	
3	Both	300	
9	Don't know	1	
.	Missing	6565	

<b>VIQ220</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Glasses/contact lenses worn for distance		
<b>English Text:</b> Do you wear glasses or contact lenses for distance vision, such as when you watch television?			
<b>English Instructions:</b>			
Code or Value	Description	Count	Skip to Item
1	Yes	2819	
2	No	3702	VIXOCMT
9	Don't know	5	
.	Missing	464	

<b>VIQ230</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Is distance correction available?		
<b>English Text:</b> If VIQ220 = "Yes", record if examinee brought their distance correction to the testing center.			
<b>English Instructions:</b> The SP could be wearing the correction or brought it with them.			
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Yes	2413	
2	No	406	
.	Missing	4171	

<b>VIQ240</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Which type? Glasses or contacts?		
<b>English Text:</b> If VIQ230 = "Yes", record the type of correction (glasses, contacts, or a combination of glasses and contacts) the SP has with them.			
<b>English Instructions:</b> This specifies the type of correction worn by the SP for the presenting VA tests (VIDRVA and VIDLVA).			
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Glasses	2010	
2	Contacts	350	VIXOCMT
3	Both glasses and contact lenses	53	
.	Missing	4577	

<b>VIQ250</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Was prescription obtained?		
<b>English Text:</b> Did the examiner capture the prescription of the examinee's lens?			
<b>English Instructions:</b> This pertains to the lens prescription used for viewing distant objects.			
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
1	Yes	2057	
2	No	1	
.	Missing	4932	

<b>VIXPRS</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Prescription, right sphere

**English Text:** The prescription of the sphere in the right lens used for distance correction.

**English Instructions:** For distance eyeglasses only.

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
-15 to 6.5	Range of Values	1989	
88	Could not obtain	69	
.	Missing	4932	

<b>VIXPRC</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Prescription, right cylinder

**English Text:** Prescription of the cylinder in the right lens used for distance correction

**English Instructions:** For distance eyeglasses only

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0	0	418	
0.02	0.02	1	
0.03	0.03	1	
0.04	0.04	1	
0.06	0.06	2	
0.25	0.25	251	
0.29	0.29	1	
0.43	0.43	1	
0.45	0.45	1	
0.46	0.46	1	
0.5	0.5	304	
0.52	0.52	1	
0.56	0.56	1	
0.58	0.58	1	
0.63	0.63	1	
0.7	0.7	1	
0.75	0.75	268	
0.76	0.76	1	
1	1	190	
1.25	1.25	147	
1.31	1.31	1	
1.34	1.34	1	
1.41	1.41	1	
1.5	1.5	101	

1.75	1.75	60	
2	2	55	
2.03	2.03	1	
2.25	2.25	40	
2.5	2.5	40	
2.53	2.53	1	
2.54	2.54	1	
2.75	2.75	23	
3	3	16	
3.17	3.17	1	
3.25	3.25	9	
3.5	3.5	5	
3.68	3.68	1	
3.75	3.75	8	
4	4	9	
4.25	4.25	7	
4.5	4.5	1	
4.75	4.75	3	
5	5	3	
5.25	5.25	2	
5.5	5.5	1	
5.75	5.75	1	
6	6	1	
6.25	6.25	1	
7.5	7.5	1	
7.75	7.75	1	
88	Could not obtain	69	
.	Missing	4932	

<b>VIXPRA</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Prescription, right axis

**English Text:** Prescription of the axis in the right lens used for distance correction

**English Instructions:** For distance eyeglasses only.

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	1989	
888	Could not obtain	69	
.	Missing	4932	

<b>VIXPLS</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Prescription, left sphere

**English Text:** Prescription of the sphere in the left lens used for distance correction.

**English Instructions:** For distance eyeglasses only.

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
-14 to 8	Range of Values	1988	
88	Could not obtain	70	
.	Missing	4932	

<b>VIXPLC</b>	<b>Target</b>					
	B(12 Yrs. to 150 Yrs.)					
<b>Hard Edits</b>	<b>SAS Label</b>					
	Prescription, left cylinder					
<b>English Text:</b> Prescription of the cylinder in the left lens used for distance correction.						
<b>English Instructions:</b> For distance eyeglasses only.						
Code or Value	Description	Count	Skip to Item			
0	0	403				
0.04	0.04	1				
0.05	0.05	1				
0.08	0.08	1				
0.1	0.1	1				
0.2	0.2	1				
0.21	0.21	1				
0.24	0.24	2				
0.25	0.25	255				
0.28	0.28	1				
0.32	0.32	1				
0.41	0.41	1				
0.43	0.43	1				
0.44	0.44	1				
0.48	0.48	1				
0.5	0.5	351				
0.69	0.69	2				
0.72	0.72	1				
0.75	0.75	242				
0.98	0.98	1				
1	1	185				
1.23	1.23	1				
1.25	1.25	156				
1.5	1.5	90				

1.51	1.51	1	
1.57	1.57	1	
1.75	1.75	62	
2	2	55	
2.09	2.09	1	
2.25	2.25	46	
2.35	2.35	1	
2.49	2.49	1	
2.5	2.5	32	
2.66	2.66	1	
2.75	2.75	25	
3	3	13	
3.25	3.25	14	
3.5	3.5	9	
3.75	3.75	6	
4	4	4	
4.25	4.25	3	
4.5	4.5	3	
4.75	4.75	4	
5	5	1	
5.5	5.5	1	
5.75	5.75	1	
6.5	6.5	1	
8.75	8.75	1	
88	Could not obtain	70	
.	Missing	4932	

<b>VIXPLA</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	Prescription, left axis		
<b>English Text:</b> Prescription of the axis in the left lens used for distance correction.			
<b>English Instructions:</b> For distance eyeglasses only			
<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	1988	
888	Could not obtain	70	
.	Missing	4932	

VIXOCMT	Target
	B(12 Yrs. to 150 Yrs.)
Hard Edits	SAS Label
	Visual Acuity Comments

**English Text:** The examiner can note special circumstances related to a visual acuity test.

**English Instructions:** These apply to distance vision tests.

Code or Value	Description	Count	Skip to Item
1	Monovision glasses/contacts worn for visual acuity	9	
2	Cataract contact lenses worn for objective refraction	2	
3	Contacts worn for objective refraction	9	
4	Artificial eye	7	
5	Monovision contacts worn for objective refraction	2	
6	Contact in right eye only for presenting visual acuity	2	
7	Contact in left eye only for presenting visual acuity	2	
.	Missing	6957	

<b>VIXORSM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	OR right sphere, median

**English Text:** Spherical dioptic power (median value of three objective refractions) of the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
-21.75 to 6.75	Range of Values	6296	
88	Could not obtain	197	
.	Missing	497	

<b>VIXORCM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	OR right cylinder, median

**English Text:** Cylindrical dioptric power (median value of three objective refractions) of the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 8.25	Range of Values	6296	
88	Could not obtain	197	
.	Missing	497	

<b>VIXORAM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	OR right axis, median

**English Text:** Axis of refractive astigmatism (median value of three objective refractions) of the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	6296	
888	Could not obtain	197	
.	Missing	497	

<b>VIDORFM</b>	<b>Target</b>					
	B(12 Yrs. to 150 Yrs.)					
<b>Hard Edits</b>	<b>SAS Label</b>					
	OR right confidence level reading					
<b>English Text:</b> The confidence level of the objective refraction reading for the right eye (mean of three measures).						
<b>English Instructions:</b> Lower values equate to less confidence in the objective refraction values.						
Code or Value	Description	Count	Skip to Item			
5	5	24				
5.3	5.3	21				
5.5	5.5	2				
5.7	5.7	18				
6	6	47				
6.3	6.3	46				
6.5	6.5	3				
6.7	6.7	71				
7	7	106				
7.3	7.3	115				
7.5	7.5	3				
7.7	7.7	150				
8	8	310				
8.3	8.3	327				
8.5	8.5	1				
8.7	8.7	533				
9	9	4545				
.	Missing	668				

<b>VIXOLSM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	OR left sphere, median

**English Text:** Spherical dioptic power (median value of three objective refractions) of the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
-19.75 to 11	Range of Values	6264	
88	Could not obtain	229	
.	Missing	497	

<b>VIXOLCM</b>	<b>Target</b>		
	B(12 Yrs. to 150 Yrs.)		
<b>Hard Edits</b>	<b>SAS Label</b>		
	OR left cylinder, median		
<b>English Text:</b> Cylindrical dioptric power (median value of three objective refractions) of the examinee's left eye.			
<b>English Instructions:</b>			
Code or Value	Description	Count	Skip to Item
0 to 7.75	Range of Values	6264	
88	Could not obtain	229	
.	Missing	497	

<b>VIXOLAM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	OR left axis, median

**English Text:** Axis of refractive astigmatism (median value of three objective refractions) of the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	6264	
888	Could not obtain	229	
.	Missing	497	

VIDOLFM	<b>Target</b>					
	B(12 Yrs. to 150 Yrs.)					
Hard Edits	<b>SAS Label</b>					
	OR left confidence level reading					
<b>English Text:</b> The confidence level of the objective refraction reading of the left eye (mean of three measures).						
<b>English Instructions:</b> Lower values equate to less confidence in the objective refraction values.						
Code or Value	Description	Count	Skip to Item			
5	5	19				
5.3	5.3	13				
5.5	5.5	7				
5.7	5.7	29				
6	6	48				
6.3	6.3	41				
6.5	6.5	3				
6.7	6.7	69				
7	7	115				
7.3	7.3	96				
7.5	7.5	5				
7.7	7.7	136				
8	8	294				
8.3	8.3	332				
8.5	8.5	9				
8.7	8.7	542				
9	9	4594				
.	Missing	638				

<b>VIXKRM1</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry radius flat curve (mm)

**English Text:** Keratometric measure. Radius of corneal curvature (in mm) in the least power meridian of the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
5.96 to 9.91	Range of Values	6442	
88	Could not obtain	51	
.	Missing	497	

<b>VIXKRD1</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry power flat curve (D)

**English Text:** Keratometric measure. Dioptric power in the least power meridian of the cornea in the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
34 to 56.75	Range of Values	6442	
88	Could not obtain	51	
.	Missing	497	

<b>VIXKRG1</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry axis flat curve (deg)

**English Text:** Keratometric measure. Axis of corneal astigmatism (in degrees) in the least power meridian of the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	6441	
888	Could not obtain	51	
.	Missing	498	

<b>VIXKRM2</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry radius steep curve(mm)

**English Text:** Keratometric measure. Radius of corneal curvature (in mm) in the greatest power meridian of the examinee's right eye

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
4.94 to 9.04	Range of Values	6442	
88	Could not obtain	51	
.	Missing	497	

<b>VIXKRD2</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry power steep curve (D)

**English Text:** Keratometric measure. Dioptric power in the meridian of the cornea with the greatest power in the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
37.25 to 68.25	Range of Values	6442	
88	Could not obtain	51	
.	Missing	497	

<b>VIXKRG2</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry axis steep curve (deg)

**English Text:** Keratometric measure. Axis of corneal astigmatism (in degrees) in the greatest power meridian of the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 179	Range of Values	6441	
888	Could not obtain	51	
.	Missing	498	

<b>VIXKRMM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry radius, average (mm)

**English Text:** Keratometric measure. Radius of corneal curvature (in mm) averaged across meridians in the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
5.81 to 9.09	Range of Values	6442	
88	Could not obtain	51	
.	Missing	497	

<b>VIXKRDM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry power, average (D)

**English Text:** Keratometric measure. Dioptric power of the cornea averaged across meridians in the examinee's right eye

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
37.25 to 58	Range of Values	6442	
88	Could not obtain	51	
.	Missing	497	

<b>VIXKRC</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry cylinder

**English Text:** Keratometric measure. Difference in dioptic power between meridians of the cornea in the examinee's right eye

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 32.75	Range of Values	6442	
88	Could not obtain	51	
.	Missing	497	

<b>VIXKRCG</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right keratometry axis (deg)

**English Text:** Keratometric measure. Axis of corneal astigmatism (in degrees) in the steepest meridian of the cornea in the examinee's right eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 179	Range of Values	6441	
888	Could not obtain	51	
.	Missing	498	

<b>VIXKLM1</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry radius flat curve (mm)

**English Text:** Keratometric measure. Radius of corneal curvature (in mm) in the least power meridian of the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
6.13 to 10	Range of Values	6451	
88	Could not obtain	42	
.	Missing	497	

<b>VIXKLD1</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry power flat curve (D)

**English Text:** Keratometric measure. Dioptric power in the least power meridian of the cornea in the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
33.75 to 55	Range of Values	6451	
88	Could not obtain	42	
.	Missing	497	

<b>VIXKLG1</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry axis flat curve (deg)

**English Text:** Keratometric measure. Axis of corneal astigmatism (in degrees) in the least power median of the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	6451	
888	Could not obtain	42	
.	Missing	497	

<b>VIXKLM2</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry radius steep curve (mm)

**English Text:** Keratometric measure. Radius of corneal curvature (in mm) in the greatest power meridian of the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
5.55 to 8.98	Range of Values	6451	
88	Could not obtain	42	
.	Missing	497	

<b>VIXKLD2</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry power steep curve (D)

**English Text:** Keratometric measure. Dioptric power in the meridian of the cornea with the greatest power in the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
37.5 to 60.75	Range of Values	6451	
88	Could not obtain	42	
.	Missing	497	

<b>VIXKLG2</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry axis steep curve (deg)

**English Text:** Keratometric measure. Axis of corneal astigmatism (in degrees) in the greatest power meridian of the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	6451	
888	Could not obtain	42	
.	Missing	497	

<b>VIXKLMM</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry radius, average (mm)

**English Text:** Keratometric measure. Radius of corneal curvature (in mm) averaged across meridians in the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
5.85 to 9.09	Range of Values	6451	
88	Could not obtain	42	
.	Missing	497	

VIXKLDL	Target		
	B(12 Yrs. to 150 Yrs.)		
Hard Edits	SAS Label		
	Left keratometry power, average (D)		
<b>English Text:</b> Keratometric measure. Dioptric power of the cornea averaged across meridians in the examinee's left eye.			
<b>English Instructions:</b>			
Code or Value	Description	Count	Skip to Item
37.25 to 57.75	Range of Values	6451	
88	Could not obtain	42	
.	Missing	497	

<b>VIXKLCD</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry cylinder

**English Text:** Keratometric measure. Difference in dioptic power between meridians of the cornea in the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 18.5	Range of Values	6451	
88	Could not obtain	42	
.	Missing	497	

<b>VIXKLCG</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left keratometry axis (deg)

**English Text:** Keratometric measure. Axis of corneal astigmatism (in degrees) in the steepest meridian of the cornea in the examinee's left eye.

**English Instructions:**

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
0 to 180	Range of Values	6451	
888	Could not obtain	42	
.	Missing	497	

VIDRVA	Target
	B(12 Yrs. to 150 Yrs.)
Hard Edits	SAS Label
	Right visual acuity, presenting

**English Text:** The presenting visual acuity of the right eye with usual correction.

**English Instructions:** Usual correction could be: eyeglasses, contacts, eyeglasses and contacts, or no correction depending on what the SP wore (or brought with them) to view distant objects on the day they visited the MEC (see VIQ230 and VIQ240).

Code or Value	Description	Count	Skip to Item
20	20/20	2776	
25	20/25	1638	
30	20/30	613	
40	20/40	320	
50	20/50	666	
60	20/60	104	
80	20/80	85	
200	20/200	161	
666	20/200+	85	
.	Missing	542	

<b>VIDLVA</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left visual acuity, presenting

**English Text:** The presenting visual acuity of the left eye with usual correction.

**English Instructions:** Usual correction could be: eyeglasses, contacts, eyeglasses and contacts, or no correction depending on what the SP wore (or brought with them) to view distant objects on the day they visited the MEC (see VIQ230 and VIQ240).

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
20	20/20	2818	
25	20/25	1566	
30	20/30	643	
40	20/40	312	
50	20/50	685	
60	20/60	78	
80	20/80	81	
200	20/200	160	
666	20/200+	104	
.	Missing	543	

<b>VIDROVA</b>	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Right visual acuity, w/ obj. refraction

**English Text:** The visual acuity with objective refraction of the right eye.

**English Instructions:** This is the visual acuity reported by the SP after the autorefractor inserted what it deemed, based on the objective refraction, to be the most appropriate lens (if any) to allow the eye to see 20/25 or better. This test was only performed on eyes whose presenting visual acuity was 20/30 or worse.

<b>Code or Value</b>	<b>Description</b>	<b>Count</b>	<b>Skip to Item</b>
25	20/25	1356	
30	20/30	122	
40	20/40	120	
50	20/50	221	
60	20/60	15	
80	20/80	28	
200	20/200	42	
666	20/200+	31	
.	Missing	5055	

VIDLOVA	<b>Target</b>
	B(12 Yrs. to 150 Yrs.)
<b>Hard Edits</b>	<b>SAS Label</b>
	Left visual acuity, w/ obj. refraction

**English Text:** The visual acuity with objective refraction of the left eye.

**English Instructions:** This is the visual acuity reported by the SP after the autorefractor inserted what it deemed, based on the objective refraction, to be the most appropriate lens (if any) to allow the eye to see 20/25 or better. This test was only performed on eyes whose presenting visual acuity was 20/30 or worse.

Code or Value	Description	Count	Skip to Item
25	20/25	1396	
30	20/30	142	
40	20/40	95	
50	20/50	197	
60	20/60	21	
80	20/80	38	
200	20/200	39	
666	20/200+	51	
.	Missing	5011	